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Patent Claims

1. A method for operating a drive train (10) of a motor vehicle, having
   - a drive machine (14),
   - an automated variable speed transmission (19) and
   - at least one control device (16),

wherein
   - the drive machine (14) is actuated by the control device (16),
   - a rotational speed of the drive machine (14) is processed by the control device (16),
   - when there is an actuated change in rotational speed of the drive machine (14) from a starting rotational speed (67a, 87a) to a target rotational speed (68a, 69a, 88a, 89a) during a neutral position of the variable speed transmission (19), current profile parameters of the change in rotational speed are established and
   - corrected profile parameters by means of which a profile of rotational speed of the drive machine (14) in selected operating states is calculated in advance are then determined using pre-stored profile parameters and current profile parameters,

characterized in that
the corrected profile parameters are determined as a function of the starting rotational speed (67a, 87a) and/or the target rotational speed (68a, 69a, 88a, 89a).

2. The method as claimed in claim 1,
characterized in that
a profile parameter is in the form of a gradient of the change in rotational speed.

3. The method as claimed in claim 2,

characterized in that
a corrected gradient (g_{korr}) is determined as a function of the difference between the starting rotational speed (67a, 87a) and the target rotational speed (68a, 69a, 88a, 89a).

4. A method for operating a drive train (10) of a motor vehicle, having
- a drive machine (14),
- an automated variable speed transmission (19) and
- at least one control device (16),

wherein
- the drive machine (14) is actuated by the control device (16),
- a rotational speed of the drive machine (14) is processed by the control device (16),
- when there is an actuated change in rotational speed of the drive machine (14) from a starting rotational speed (67a, 87a) to a target rotational speed (68a, 69a, 88a, 89a) during a neutral position of the variable speed transmission (19) a current gradient (g_{akt}) of the change in rotational speed is established and
- a corrected gradient (g_{korr}) is then determined with a pre-stored gradient value ($g_{speicher}$) and the current gradient (g_{akt}),

characterized in that
- a current reaction time (T_{akt}) is established as a time period between an actuation time (time 66c) and a time (100c) at which a change in a status variable of the drive train (10) exceeds an adjustable limiting value (rotational speed limit 101c),
- a corrected reaction time (T_{korr}) is determined using a pre-stored reaction time ($T_{speicher}$) and the current reaction time (T_{akt}), and
- a profile of the rotational speed of the drive machine (14) is calculated in advance by means of

the corrected gradient (g_{korr}) and the corrected reaction time (T_{korr}) in selected operating states.

5. The method as claimed in claim 4, characterized in that the corrected gradient (g_{korr}) and/or the corrected reaction time (T_{korr}) are determined as a function of the starting rotational speed (67a, 87a) and/or of the target rotational speed (68a, 69a, 88a, 89a).

6. The method as claimed in one of claims 1 or 4, characterized in that the corrected gradient (g_{korr}) and/or the corrected reaction time (T_{korr}) are determined by averaging the pre-stored values ($g_{speicher}$, $T_{speicher}$) and the current values (g_{akt}, T_{akt}).

7. The method as claimed in claim 6, characterized in that deviations of the current gradient (g_{akt}) and/or of the current reaction time (T_{akt}) from the pre-stored values ($g_{speicher}$, $T_{speicher}$) are determined and if the deviations exceed adjustable limiting values, the pre-stored values ($g_{speicher}$, $T_{speicher}$) are adopted for the corrected gradient (g_{korr}) and/or the corrected reaction time (T_{korr}).

8. The method as claimed in one of claims 1 or 4, characterized in that the corrected gradient (g_{korr}) and/or the corrected reaction time (T_{korr}) are stored and are used as pre-stored values ($g_{speicher}$, $T_{speicher}$) in the following determination of the corrected gradient (g_{korr}) and/or of the corrected reaction time (T_{korr}).

9. The method as claimed in claim 6 or 8, characterized in that it is established how often the corrected gradient

(g_{korr}) and/or the corrected reaction time (T_{korr}) have been determined and how often the averages are dependent on the established values.

10. The method as claimed in one of claims 1 or 4, characterized in that
the determination of the corrected gradient (g_{korr}) and/or of the corrected reaction time (T_{korr}) is dependent on state variables of the drive train (10).

11. The method as claimed in one of claims 1 or 4, characterized in that
the determination of the corrected gradient (g_{korr}) and/or of the corrected reaction time (T_{korr}) is dependent on actuated manipulated variables of the drive machine (14).

12. The method as claimed in one of claims 1 or 4, characterized in that
the determination of the current gradient (g_{akt}) and/or of the current reaction time (T_{akt}) is carried out during a synchronization operation when there is a change of gear speed of the variable speed transmission (19).

13. The method as claimed in claim 12, characterized in that
a selection of a target gear speed is carried out when there is a change in gear speed of the variable speed transmission (19), as a function of the corrected gradient (g_{korr}) and/or of the corrected reaction time (T_{korr}).

14. A method for operating a drive train of a motor vehicle, having
- a drive machine (14),
- an automated variable speed transmission (19) and
- at least one control device (16),

wherein

- the drive machine (14) is actuated by the control device (16),
- a rotational speed of the drive machine (14) is processed by the control device (16),

characterized in that,

an initial operation of the drive train (10),

- the control device (16) actuates the drive machine (14) in such a way that changes in rotational speed occur,
- profile parameters of the changes in rotational speed are determined, and
- the profile parameters which are determined are stored.

15. The method as claimed in claim 14,
characterized in that
the profile parameters are in the form of

- a reaction time in the sense of a time period between an actuation time and a time at which a change in a state variable of the drive machine (14) exceeds an adjustable limiting value, or
- a gradient of the changes in rotational speed.

16. The method as claimed in claim 14 or 15,
characterized in that

- changes in rotational speed of the drive machine (14) are actuated repeatedly,
- averages of the profile parameters which occur are formed, and
- the results of the averages are stored.

17. The method as claimed in claim 14 or 15,
characterized in that
the determination of the profile parameters is dependent on a starting rotational speed and/or target rotational speed.

18. The method as claimed in claim 14 or 15, characterized in that
the determination of the profile parameters is dependent on state variables of the drive train (10).

19. The method as claimed in claim 14 or 15, characterized in that
the determination of the profile parameters is dependent on actuated manipulated variables of the drive machine (14).